REMARKS

Claims 1, 6-8, 10 and 12 are pending. The support in the published specification for the amendments to the claims is as follows: Claims 1 and 8: [0047] and Tables 4 and 5 (in the Tables 4 and 5, the ammonia water pressure was controlled to a constant pressure); and Claim 12: dependency. No new matter is added.

The applicant appreciates the Examiner's time and comments during the interview on November 24, 2009.

Regarding the issue about how the rate of fluid flow (primary and secondary fluids) changes, the Applicant assumes the following:

In the present liquid supply system, the pressure of the secondary fluid (P1) is controlled to a constant pressure using the pressurizing apparatus. When the flow rate of the primary fluid increases, the pressure of the primary fluid (P2) decreases. Since P1 is maintained at a constant value, ΔP (P1-P2) increases when the flow rate of the primary fluid increases, and therefore, the flow rate of the secondary fluid increases. As a result, when the flow rate of the primary fluid increases, the flow rate of the secondary fluid increases accordingly.

Flow rate of the primary fluid ↑(↓) → Pressure of the primary fluid (P2) ↑(↓) → ΔP (P1-P2) ↑(↓) → Flow rate of the secondary fluid ↑(↓)

The present inventors found that the flow rate of the secondary fluid varies approximately proportionally to the flow rate of the primary fluid under the conditions of claim 1, thereby providing "the effects such that the concentration of the electrolyte liquid can be kept constant and a constant pH can be obtained without feedback control."

However, as described above, the effects of the present invention is obtained without achieving a feedback control in which the flow rate of the secondary fluid is controlled according to the flow rate of the primary fluid.

Claims 1, 3, 4, 6-8, and 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Laverdiere (US PG Pub

20050173003) further in view of Shirakashi (US PG Pub 20040206634). (Office Action, page 3)

As will be explained below the claimed invention is structurally different and not at all *logically* suggested from the combination of the prior art.

Although Shirakashi describes that the electric resistance can be reduced by using an electrolytic solution, there is no description regarding the production process of the electrolytic solution in the reference of Shirakashi.

Meanwhile, the invention of Laverdiere relates to a dispensing apparatus and a proportional fluid valve used for the dispensing apparatus. Laverdiere discloses a system in which a fluid control valve is controlled according to the pressure drop between inlet and outlet of a flow element in which a hollow fiber tube is used. In other words, in the dispensing apparatus of Laverdiere, the fluid is discharged through the flow element and dispensed onto a semiconductor wafer, and finally released into the atmosphere.

In contrast, in the present invention, the ***fluid is discharged into a fluid of ultra pure water***, not into the atmosphere. Further, when the flow rate of ultra pure water is changed, the ***pressure difference between inlet and outlet of the hollow fiber tube (P1-P2) is changed*** accordingly, as a result, the effects, such that the ***concentration*** of the electrolyte liquid can be ***kept constant and a constant pH can be obtained without achieving any control, can be obtained.***

In other words, in the present invention, the functions of the hollow fiber tube is not only to cause a pressure drop of the electrolyte liquid, which is flowing through the inside of the hollow fiber tube, but also ***to self-control the pressure difference (P1-P2) when the electrolyte liquid, which is passed through the hollow fiber tube, is discharged into ultra pure water***, and moreover the flow rate of ultra pure water is changed. However, Laverdiere does not disclose such a self-control function of the hollow fiber tube.

In addition, Ghate also does not disclose the self-control of flow rate without achieving any artificial control.

Furthermore, the electrolyte liquid produced by the self-control function of hollow fiber tube is an ultra-dilute aqueous solution having the concentration of 0.00001-0.1%. It is difficult to produce such an ultra-dilute aqueous solution by an artificial control.

Therefore, there is no teaching, suggestion or motivational description in the reference of

Ghate to combine the hollow fiber tube with the liquid supply apparatus of Laverdiere.

Moreover, as described above, ***Shirakashi does not describe the production process of the electrolyte liquid***, and thus, there is no teaching, suggestion or motivational description to combine Laverdiere with Ghate even taking the disclosure of Shirakashi into consideration.

Since it has been shown that no logical *prima facie* conclusion of obviousness can be made with the cited art, it is respectfully requested to reconsider and withdraw the rejection.

Claims 1, 3, 4, 6-8, and 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Kumano et al. (US PG Pub 20060144777) further in view of Shirakashi (US PG Pub 20040206634). (Office Action, page 4)

In the system of Kumano, a hollow fiber tube is used as a filter film, such as a reverse osmosis membrane. For example, as in the case of using the hollow fiber tube to produce freshwater from seawater, seawater at a high pressure flows outside of the hollow fiber tube and freshwater flows into the inside of the hollow fiber tube from the outside of the hollow fiber tube. In this case, freshwater penetrates almost the entire area of the hollow fiber tube in the axial direction by the "feed fluid distribution pipe 3."

In this way, in the system of Kumano, the fluid flowing the inside of the hollow fiber tube is the fluid that is penetrated from almost the entire area of the hollow fiber tube in the axial direction. ***In contrast, in the liquid supply system of the claimed invention, the fluid flows from one end of the hollow fiber tube to the other end of the hollow fiber tube. Therefore, Kumano and the claimed invention are structurally different in use and function.*** Therefore, there is no suggestion or motivational description regarding the technical features in Kumano, such that the fluid flows from ***one end of the hollow fiber tube to the other end of the hollow fiber tube and the pressure is self-controlled.***

Thus, there is no teaching, suggest or motivational description in Kumano to adopt the hollow fiber tube in the liquid supply system of Ghate.

Furthermore, although Shirakashi discloses an electrolyte liquid, Shirakashi does not describe the production process thereof, and as a result, there is no teaching, suggestion or motivational description to combine Kumano with Ghate even taking the disclosure of Shirakashi into a consideration.

In other words, the cited art is *structurally distinct* and there is no motivation disclosed or *logical problem to be overcome* to suggest their combination. Thus for at least this basis, it is respectfully requested to reconsider and withdraw the rejection.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: January 4, 2010

Respectfully submitted,

Customer No. 21874

Electronic signature: /James E. Armstrong, IV/
James E. Armstrong, IV
Registration No.: 42,266
EDWARDS ANGELL PALMER & DODGE LLP
P.O. Box 55874
Boston, Massachusetts 02205
(202) 478-7375
Attorneys/Agents For Applicant